WHAT WE CLAIM IS:

1. An organic electroluminescent array exposure head, comprising a long length of substrate, an array of organic electroluminescent devices arranged on said substrate in at least one row of pixel pattern, and a ball lens positioned in alignment with a light emitter of each organic electroluminescent device on a light-emitting side of said array of organic electroluminescent devices, wherein:

said ball lens is located in such a way as to satisfy condition (8):

$$0 \leqq D \leqq 0.07m \quad \ldots (8)$$

where D is a distance between a surface of a light-emitting layer in the light emitter of each organic electroluminescent device and an apex of an entrance side-surface of the ball lens positioned in alignment with said light emitter, and m is a diameter of the ball lens.

2. The organic electroluminescent array exposure head according to claim 1, wherein said ball lens is formed of a transparent material having a refractive index of 2 or greater.

3. An organic electroluminescent array exposure head, comprising a long length of substrate, an array of organic electroluminescent devices arranged on said substrate in at least one row of pixel pattern, and a ball lens positioned in alignment with a light emitter of each organic electroluminescent device on a light-emitting side

of the array of organic electroluminescent devices while said ball lens is in contact with said light emitter, wherein said ball lens is formed of a transparent material having a refractive index of 2 or greater.

4. The organic electroluminescent array exposure head according to any one of claims 1 to 3, which comprises an array of a plurality of rows of organic electroluminescent devices parallel with one another, wherein a light emitter of each organic electroluminescent device in one row is displaced from a light emitter of each organic electroluminescent device in another row by 1/number of rows with respect to a spacing between adjacent light emitters in a row.

5. The organic electroluminescent array exposure head according to claim 4, which further comprises at least two array sets in a columnar direction, wherein each array set comprises a plurality of rows of organic electroluminescent devices.

6. The organic electroluminescent array exposure head according to any one of claims 1 to 5, wherein a light absorber is filled between adjacent ball lenses at an area except an effective exit surface.

7. An imaging system, which incorporates the organic electroluminescent array exposure head according to any one of claims 1 to 6 as an exposure head for writing an image to an image carrier.

8. The imaging system according to claim 7, which is a tandem type color imaging system comprising at least

two imaging stations, each comprising around the image carrier a charger means, an exposure head, a toner developer means and a transfer means, wherein color imaging is carried out by passing a transfer medium through each station.

9. An organic electroluminescent array exposure head, comprising a long length of substrate, an array of organic electroluminescent devices arranged on said substrate in at least one row of pixel pattern, and a ball lens positioned in alignment with a light emitter of each organic electroluminescent device on a light-emitting side of the array of organic electroluminescent devices, wherein:

a space between adjacent ball lenses is filled with a fixing layer up to a height $m(1-1/n^2)$ as measured from an apex of an entrance side-surface of said ball lens, wherein $\underline{m}$ is a diameter of said ball lens and $\underline{n}$ is a refractive index of said ball lens, so that said ball lens is fixed in place.

10. The organic electroluminescent array exposure head according to claim 9, wherein said fixing layer comprises a layer capable of absorbing light.

11. An organic electroluminescent array exposure head, comprising a long length of substrate, an array of organic electroluminescent devices arranged on said substrate in at least one row of pixel pattern, and a ball lens positioned in alignment with a light emitter of each organic electroluminescent device on a light-emitting side

of the array of organic electroluminescent devices, wherein:

said ball lens is at least embedded in an aerogel layer from a height $m(1-1/n^2)$ as measured from an apex of an entrance side-surface of said ball lens, where m is a diameter of said ball lens and n is a refractive index of said ball lens, up to a height at which an exit side-surface of said ball lens is overall covered with said aerogel layer.

12. The organic electroluminescent array exposure head according to claim 11, wherein a transparent protective layer is provided on a surface of said aerogel layer.

13. The organic electroluminescent array exposure head according to claim 12, wherein said transparent protective layer comprises a transparent conductive layer.

14. The organic electroluminescent array exposure head according to any one of claims 11 to 13, wherein a fixing layer capable of absorbing light is provided on a substrate side of said aerogel layer.

15. The organic electroluminescent array exposure head according to any one of claims 9 to 14, wherein said ball lens has a refractive index of 2 or greater.

16. An imaging system, which incorporates the organic electroluminescent array exposure head according to any one of claims 9 to 15 as an exposure head for writing an image to an image carrier.

17. The imaging system according to claim 16,

which is a tandem type color imaging system comprising at least two imaging stations, each comprising around the image carrier a charger means, an exposure head, a toner developer means and a transfer means, wherein color imaging is carried out by passing a transfer medium through each station.

18. A process for fabricating an array-form exposure head comprising a long length of substrate, an array of light-emitting devices or secondary light sources arranged on said substrate in at least one row of pixel pattern, and a ball lens positioned in alignment with a light emitter of each light-emitting device or each secondary light source on a light-emitting side of the array of light-emitting devices or secondary light sources, wherein:

a ball lens alignment mold is provided with an array of ball-receiving holes in an arrangement conforming to an arrangement of light emitters of said array of light emitting devices or secondary light sources, wherein each ball-receiving hole has a diameter equal to or slightly larger than that of said ball lens,

ball lenses are fitted in said ball lens-receiving holes in said ball lens alignment mold, and

each ball lens on said ball lens alignment mold is brought close to each light emitter of said array of light-emitting devices or secondary light sources while in alignment therewith, whereupon each ball lens is bonded to said array of light-emitting devices or secondary light

sources.

19. The fabrication process according to claim 18, wherein each ball lens-receiving hole in said ball lens alignment mold is provided with a ball lens suction mechanism for facilitating fitting of the ball lens in each ball lens-receiving hole and retaining the ball lens fitted in each ball lens-receiving hole until the ball lens is bonded and fixed to said array of light-emitting devices or secondary light sources.

20 The fabrication process according to claim 18 or 19, wherein prior to bringing each ball lens on said ball lens alignment mold close to each light emitter of said array of light emitting devices or secondary light sources while in alignment therewith, whether or not a given ball lens is fitted in each ball lens-receiving hole in said ball lens alignment mold is inspected.

21. The fabrication process according to claim 20, wherein a light-emitting device is placed at a center of a bottom of each of said ball lens-receiving holes, and whether or not a given ball lens is fitted in each of said ball lens-receiving holes in said ball lens alignment mold is inspected from a light-quantity profile found when said light-emitting devices are all allowed to emit light.

22. The fabrication process according to any one of claims 18 to 21, wherein prior to bringing each ball on said ball lens alignment mold close to each light emitter of said array of light-emitting devices or secondary light sources while in alignment therewith, an adhesive agent is

applied on a surface of the substrate of said array of light-emitting devices or secondary light sources or portions of said ball lens opposite to said surface, whereupon each ball lens is brought close to and bonded to said array of light-emitting devices or secondary light sources.

24. The fabrication process according to any one of claims 18 to 22, wherein said array of light-emitting devices or secondary light sources comprises an organic electroluminescent array.

25. The fabrication process according to any one of claims 18 to 22, wherein said array of light-emitting devices or secondary light sources comprises an LED array.

26. An imaging system, which incorporates an array-form exposure head fabricated by the fabrication process according to any one of claims 18 to 25 as an exposure head for writing an image to an image carrier.

27. The imaging system according to claim 26, which is a tandem type color imaging system comprising at least two imaging stations, each comprising around the image carrier a charger means, an exposure head, a toner developer means and a transfer means, wherein color imaging is carried out by passing a transfer medium through each station.